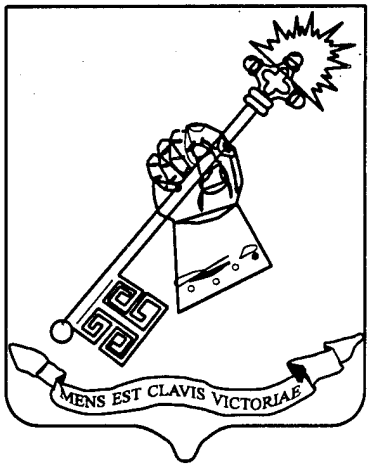
THE URBAN ANATOMY: THE FUNDAMENTALS OF A CITY

A Monograph
By
Major Richard M. Francey, Jr.
Field Artillery



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ABSTRACT

THE URBAN ANATOMY: THE FUNDAMENTALS OF A CITY by MAJ Richard M. Francey, Jr., USA, 54 pages.

Recent changes have made urban operations a greater probability in future contingencies. For years, the common approach to military operations in urban terrain (MOUT) has been to avoid it as much as possible. With that approach, our doctrine and training emphasis has been away from MOUT. Although we have survived with this strategy in the past, it is quickly becoming an obsolete and dangerous approach.

The doctrinal approach to MOUT has been to treat the urban environment as different terrain on which to apply conventional tactics. This view is espoused in the Field Manual 90-10, Military Operations in Urban Terrain, written in 1979. Many changes have occurred since 1979. Field Manual 90-10 also needs to change.

The urban environment is complex. This potential battlefield is complicated by the congestion of noncombatants. They rely on the city for many basic needs. Understanding the fundamentals of a city can be a force multiplier for commanders and planners. This paper analyzes this system of systems and proposes doctrinal modification.

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SECTION 1

Introduction

The U.S. population will not accept uncontrolled destruction and human suffering during our operations. This is not easy in an environment like Mogadishu.[1]

MG Carl Ernst

Fighting in a city is significantly different than fighting on the conventional battlefield. The concentration of civilians, as noncombatants living in the city, will impact military operations both directly and indirectly. A city provides the structure from which the government operates, the economy prospers, and the community lives. Each of these functions provides normalcy to the city and its populace. Therefore, minimizing hardship to noncombatants must be a requirement for U.S. missions and planners must understand the composition of this different battlefield. U.S. operations should aim to overcome the immediate adversary while minimizing hardship to the civilian population. This paper does not propose a passive approach to urban operations, rather that commanders and planners understand the full nature of an urban environment and the impact of their actions on the populace. Planners, that have a comprehensive understanding of the city, will make more educated decisions and understand the implications of these decisions.

A city is more than a change in terrain on which to apply conventional tactics. A city is composed of a system of systems that supports the total functioning of an urban area. A city is much like the human body - no part

functions independent of the others. The systems within the city include its physical composition, supporting utilities and social factors (e g culture and religion). Each of these components impacts on the population, the normal operation of the city, and potentially the long term success of military operations conducted there. The operational commander and his planners must understand the functions and interrelationships of these systems if they are to be successful.

An objective of military operations in a city should be the elimination of enemy resistance while striving for a state of normalcy for the populace of the city. Resistance could take many forms including a human enemy, famine, the results of a natural disaster, or some form of civil disturbance. While the approach will be varied toward these different adversaries, the key consideration is that each hinders the normal operations of the city. Maintaining normalcy contributes to the legitimacy of the U S. mission and the supported government / entity. This government / entity could be an indigenous government, an ousted regime, or an entity such as the United Nations. Normalcy is an attribute of the desired end state. Legitimacy is a means to attain the full end state.

Field Manual 100-5 defines legitimacy as - "sustain[ing] the willing acceptance by the people of the right of the government to govern or of a group or agency to make and carry out decisions."[2] The critical element of this definition is 'acceptance by the people'. The intent of legitimacy is to gain

local and international support for the military operation at hand. This involves gaining civilian acceptance in the host nation for the U.S. mission. Legitimacy is affected by interaction of U.S. forces with the civilian populace. During operations other than war (OOTW) this interaction is predominant. Urban operations have a greater interaction with the civilian populace than any other type of military operation. Therefore, commanders must continually assess their operations to monitor the impact on legitimacy in the eyes of the host nation, the U. S. populace and the international community.

An effective way to achieve legitimacy in the eyes of the host nation's populace is to strive to sustain normalcy in their everyday lives. Normalcy can be measured in many ways. One consideration of normalcy is the perspective of renowned psychologist, Abraham Maslow. Maslow discussed a hierarchy of needs. His theory is that as humans travel through life they attain certain levels of achievement. Maslow says that these levels create a pyramid with the most basic needs on the bottom. Humans must satisfy these needs before they can move on to the next level. If at any point, the lower needs are threatened, the individual will revert to that level of the pyramid until these needs are satisfied. These lower level needs include both physiological and safety requirements.[3]

The systems within a city satisfy many of these needs. Physiological needs include requirements like food, water and shelter. The physical composition of the city provides shelter for the population. Utilities provide the water to drink

and to cook with; the natural gas and electricity to heat homes; and the medical support to treat the sick or injured. The next level in Maslow's hierarchy is safety needs. To satisfy this need, an individual requires a sense of security. This security is a difficult element to achieve during a period of national emergency, but some of the city's systems can contribute. Information, which the population attains through its communications systems (e.g. radio, television, and newspaper), can help relieve tension that may be present from the lack of knowledge. The other elements that influence basic needs are the norms of a society, such as cultural and religious

If combat in urban areas is a higher probability in the future, the Army should examine how to maximize its effectiveness within this environment. In the words of General John W. Vessey in 1980, "We've been a bit late, perhaps, in the U.S. Forces in recognizing and dealing with the tactical and technical problems that combat in built-up areas provides us."[4] In many regards, the Army is still late. Before U.S. forces deal with the tactical problems, they must address the operational considerations of urban operations

This paper looks at the individual and collective systems of a city and the current doctrine for MOUT. It then analyzes the sufficiency of current MOUT doctrine and recommends changes for future operational MOUT manuals

SECTION 2

Individual and Collective Systems of a City

The worst policy is to attack cities . . . If the general is unable to control his impatience and orders his troops to swarm the wall like ants, one-third of them will be killed without taking the city.[5]

SUN TZU

Sun Tzu's great work The Art of War has contributed many insights to warriors past and present. Many of Sun Tzu's ideas are still relevant almost 2500 years after his death. During the past 50 years, the Army formalized the essence of the above quotation in doctrine. While it remains true that military operations in urban terrain (MOUT) are one of the most difficult missions, they are a type of combat that U.S. forces cannot avoid in the future.[6]

Many factors suggest a greater probability of urban warfare in the future.

* Cities are growing in number, population and area.
* Cities have become the cultural, political, and economic centers of gravity in most nations.
* The U.S. military has become predominantly a force projection element of national power and will require many of the city resources (e.g. sea and air ports, electrical sources, etc.).

Recent military operations (which cover the complete range of operations listed in FM 100-5) confirm an increased probability of urban operations.

Grozny in 1995	----------	Large-Scale
Kuwait City in 1990	----------	combat
Sarejevo in 1992-1995	----------	operations
(U.S. Missions)		
Baghdad in 1991	----------	Strike
Colon and Panama City in 1989	----------	Attack
Mogadishu in 1993	----------	Humanitarian Assistance
Los Angeles in 1992	----------	Civil Support
Port-Au-Prince in 1994	----------	Peace Building[7]

These are significantly different military missions with one common factor -- all were conducted in urban environments. The U.S. missions varied from specific strikes against military targets in Baghdad, to riot control in the continental United States. In all these missions, although aggressive action was taken against a specific threat, a fundamental consideration was minimizing the hardship to the populace. This was not the primary focus of these operations, yet commanders understood that achieving an effective endstate involved minimizing collateral impact on the civilian population.

Since urban operations have an increased probability, U.S. forces must understand the urban environment in which they will operate. This environment is significantly different than the conventional battlefield. The presence of civilians complicate military operations. They rely on the city for basic needs. Specific components within the city serving these needs include

infrastructure, utilities, and social factors.

A failure to sustain the infrastructure, utilities or social normalcy within a city can hinder the perceived legitimacy of an operation and perhaps overall mission success. The populace relies on the city's systems to satisfy basic needs. If military actions hinder these basic needs, the populace would suffer and attribute this hardship to ongoing operations and the forces conducting them. This would make attaining legitimacy much more difficult. To ensure the ultimate success of the mission, commanders must accommodate the welfare of the populace. Commanders accomplish this by understanding the nature of an urban environment and structuring operations to maximize combat effectiveness and minimize adverse impacts on noncombative inhabitants.

The city functions much like the human body. A city has individual parts, which like the human body, work together to keep it alive. This paper examines the three broad categories of the urban skeletal-muscular system (infrastructure), the urban organs (utilities), and the urban nervous system (social factors). This section also analyzes the interrelationship between these systems. The criteria for examination include the function and the operational implications of each.

Infrastructure

Urban infrastructure provides the foundation for the rest of the city in much the same manner as the skeleton does for the human body. This infrastructure

includes buildings, bridges, roads, airfields, ports, subways and similar physical structures. These structures provide the base on which the rest of the city is developed. This paper discusses the infrastructure in the two broad categories of transportation and physical composition.

Transportation

The transportation network of a city is an integral part of its operation. This network includes roads, railways, subways, and ports (air and sea). Transportation facilitates the inter- and intra-movement of material and personnel that form the lifeblood of the city.

Control of these transportation nodes may be important for both a given military operation and the normal functioning of the city. Supplies, which travel through this transportation system, could include food, medical supplies, heating oil and gas, and military supplies such as ammunition and spare parts. Personnel moved along this transportation network could include people with various skills and intent. They could include doctors, government officials, repairmen or military reinforcements. U.S. forces may limit the transit of enemy supplies and reinforcements, but facilitate the transport of critical civilian supplies into the city.

Operationally (as mentioned in chapter 1), securing air and sea ports may be imperative for follow-on forces in a force projection military, but there are

many possible implications of securing all the transportation nodes and stopping all inter- and intra-city movement. While having sole use of this network would facilitate the friendly mission, there are critical needs of the noncombatant populace that would go unserved. Here U.S. forces face the fact that tactical and operational decisions could have strategic consequences. Although the tactical commander may want to isolate the city, he must remain cognizant of the noncombatants' needs for medical personnel and supplies, heating supplies, food, transit to work or school and all the other items that minimize hardship and promote normalcy within the city. Minimizing this hardship will contribute to gaining the mission's legitimacy.

Physical Composition

The physical composition provides the fundamental structure in which the city community conducts normal activities. Physical features of the city have more than military significance. In addition to housing an enemy, the buildings of the city also accomodate the businesses, the government, the noncombatants, schools and similar functions critical to the normal conditions of the city.

U.S. forces must restrain the urge to rubble structures, even when they identify enemy within. There are both legal and moral reasons for this restraint. In the following article of the Geneva Conventions, the intent toward minimizing collateral damage is apparent.

> Any destruction by the Occupying Power of real or personal property belonging individually or collectively to private persons, or to the state, or to other public authorities, or to social or co-operative organizations, is prohibited, except where such destruction is rendered absolutely necessary by military operations.[8]

This restriction also has a moral consideration. While the enemy may be inside the building, so too may be innocent civilians. Therefore, the tactical commander must carefully consider a full range of implications before rubbling a building housing the enemy. "Success may well be measured by how we accomplish our mission while minimizing destruction of buildings and alienation of the population."[9] Minimizing collateral damage will reduce hardship within the city and lead to a faster return to normalcy during the post-hostilities phase.

Utilities

While infrastructure provides the skeletal system of the city, utilities are analogous to its organs. Public utilities provide the city the ability to function normally. "In peacetime, public utilities are vital to the Nation's economy and welfare. In times of national emergencies they become even more vital in maintaining people's well-being and morale . . ."[10] Concerning Maslow's hierarchy of needs, the interruption of utilities could create a void in the satisfaction of physiological and safety needs.[11]

Communications

Communications is a utility that impacts the military mission and the civilian populace. Besides face-to-face conversation, the communications system controls information flow within the city. Telephones, radio, television, and newspapers provide a community information and thus influences individual perspectives. Information may relieve much of the populace's tension and provide essential information for U. S. forces conducting their operation.

> The successful and orderly transition to an Army capable of operating against such future dangers will be marked by an Army prepared to recognize the value and importance of knowledge, information, perceptions, and public opinion, and wherever appropriate, incorporate that value and importance into its daily operations.[12]

The management of information to enhance legitimacy may occur in three distinct ways. First, communication with the local populace serves to enhance the legitimacy of the U.S. mission to the population. This includes factors such as the intent of the mission, locations of services available, or the manner in which the population can assist the mission. "If the populace does not understand your mission, false expectations are created that you may not be able to meet."[13] U.S. commanders typically use civil affairs personnel to assist him in effectively communicating with the civilian populace on these matters.

A second function of information management is to enhance the legitimacy of the U.S. involvement in the eyes of the international community. U.S. forces attain this connection through the media.

> From the 147 reporters who accompanied the D-Day Invasion in World War II to the 800 plus reporters in Panama during JUST CAUSE to the 1,300 reporters in the Kuwaiti theater of operations in DESERT STORM, the ability and desire of news media to cover U.S. military operations is constantly increasing. Certainly, the effect of graphic visual information covered by U.S. and international news organizations influenced, and some analysts contend caused, U.S. national policy objectives in Somalia, before and during operations.[14]

Reports to the media may include a candid assessment of the current operation, changes in the mission, or any other newsworthy stories. The public affairs office (PAO) can use the communication system to link with the media and subsequently the international community.

Thirdly, information management affords the friendly commander the ability to carry out his psychological operations (PSYOP) plan. These operations could include an attempt to convince the combatants that any further resistance would be futile. Information management is a force multiplier for the commander, but he must safeguard communication systems to facilitate its application. Control of the communication system also limits the enemy's use for their operations.

Communications provide a vast spectrum of influences on the mission that may help establish the legitimacy and facilitate the mission. Commanders and planners must recognize this utility to maximize its effectiveness.

Gas

Natural gas provides the basic heating for the population in many parts of the world. The natural gas industry consists of three components: production,

transmission, and local distribution. The gas companies must transport the gas to central areas and then store it in numerous facilities before pumping it to homes and businesses for use. From a tactical and operational perspective, control of this system provides minimal advantage to friendly forces, but protecting its destruction or damage would prevent unnecessary hardship to the civilian population. Since minimizing the hardship to the populace is an essential element of the operational objective, U.S. forces should take actions to protect this utility. Should this subsystem become damaged, the lack of home heating could produce a tense situation for the incumbent government, which U.S. forces are there to legitimize. Safeguarding this utility fosters goodwill between U.S. forces and the populace. Ultimately, this contributes to gaining legitimacy for the U.S. mission and the host government.

Electricity

Electricity is critical to the normal state within a modern nation.[15] Power companies in a community provide a basic service which allows the population to cook, communicate, heat water, and see at night. The process is as simple as supply and demand. The power company produces the electricity equal to the demand of a given area. There are three stages to this process: generation, transmission, and distribution. Generation is the process of producing electricity. Transmission connects power systems to the market areas. Distribution is the process of delivering the electricity to the consumer. A key

factor to remember is that electricity cannot be stored in any sizable amount. Without a stored reserve, damage to any portion of this utility will cause an immediate impact on the population.

While electricity facilitates many functions of normality, there are also military considerations. For example, the combination of equipment and training affords U.S. forces a marked advantage over most adversaries during night operations. Consequently, U.S. forces may want to control the electric system so that they can maintain this advantage for certain periods. Likewise, the commander may want to deny an enemy access to services provided through electricity. The point here is precise control versus destruction. Rather than destroying a power generation capability, forces may gain an advantage by turning the electricity off for a specified period of time, retaining the ability to return to normal operation at a moment's notice. This provides the military a distinct advantage, yet minimizes the population's hardship. The return to normal functioning of the city will be more expeditious and the resulting goodwill of the people will foster legitimacy.

Water

Water is essential to many basic human needs. Water companies provide the population clean water to drink, cook, bathe, and wash. Water production and distribution is again a very basic process. The water companies refine the

water, pump it to storage facilities and finally pump it to the consumer. The tactical implications of controlling this system are similar to that of natural gas. U.S. forces may gain no marked advantage (tactically) by controlling this system, but its protection minimizes the population's hardship and thus contributes to overall mission success.

The legitimacy of an ongoing operation could be damaged due to civilian suffering if the water supply is damaged or contaminated. Water is one of the basic (physiological) needs that Maslow discussed in his hierarchy. Safeguarding the normal availability of potable water would minimize hardship and foster the mission's legitimacy.

Health Services

Medical service is one area that is significantly lacking in most countries. To make the matter worse, the presence of deadly parasites and diseases is abundant in many areas. Disasters (natural or military) can worsen these conditions even more. Contaminated water, the lack of fuel for heating and sterilization, and increased injuries compound the implications of a shortage in health services. Support to an existing medical system may enhance the U.S. mission, as well as foster its legitimacy. This support may include medical supplies, personnel, or training. The intent should be to support the native medical services instead of replacing it entirely. This support provides legitimacy to the established medical services by preparing it for continued

stability after U.S. forces depart the crisis area.

Social Factors

Accommodating the social fabric of a nation is potentially the most influential factor in the conduct of operations. Unfortunately, this is often the most neglected factor. In wars past, U.S. forces had the luxury of conducting operations on an open battlefield where social factors seemingly had little impact. Consequently, planners spent little time emphasizing them. Operations have changed.

Social factors have greater impact in urban operations than in any other environment. The density of civilians increases the importance of social considerations. The fastest way to damage the legitimacy of an operation is to ignore or violate social mores or precepts of a nation. Urban operations involve a vast interaction with the civilian populace, which makes social factors a critical condition of operations. This section discusses social factors in three broad categories of cultural, religious, and governmental.

Cultural

Groups develop norms, which they believe in adamantly, throughout their lives. Confucius said long ago, "All people are the same. It's only their habits

that are different."[16] Most people would recognize this to be true. The next step is understanding and accepting these differences. This step is often neglected - a neglect that can have significant impact on military operations.

The interaction of different cultures during MOUT demands much greater recognition than in other environments. This greater need for understanding comes from the increased interaction with the civilian populace. "The failure of expatriots to understand and adjust to other cultures can have serious diplomatic, military and political consequences as well."[17] Unfortunately, this failure has often been the case. A basic cause of the problem is that often Americans have an instinctive belief that everyone possesses the same cultural perspective. Unfortunately, this is not the case. This line of reasoning places Americans at a significant disadvantage. This disadvantage could severely hinder mission success or cause loss of life during military operations. To overcome this, U.S. forces must work hard at avoiding this presumption.[18]

Every culture has a set of norms and values. These norms could involve such diverse areas as food, sleep patterns, relationships - casual and close, manners, and cleanliness.[19] Understanding these differences is only the start in preparing for cultural differences. "The individual who goes out to help the people of another culture without at least some elementary understanding of what [their] culture is and how it operates is in the class with the medically untrained person who attempts to treat the sick."[20] Training all soldiers (before deployment) is a critical step in preparing to conform to these local cultures

The more U.S. forces interact with other cultures, the more cultural ignorance may adversely impact operations.

Religion

Failure to recognize and respect religious beliefs is almost certainly a rapid means to erode the legitimacy of the U.S. mission. "Religious beliefs and practices are among the most important and least understood aspects of the cultures of other peoples."[21] In many parts of the world, religious norms are a matter of life and death. In many religious wars, it is not uncommon to find suicidal acts in the name of a given god. In these situations, religious beliefs are considered more important than life itself. When beliefs are this strong, it is imperative that U.S. forces recognize and adjust for these convictions. Unfortunately, these have (as with cultural differences) often been ignored. Attaining legitimacy, within this area, is merely ensuring that U.S. forces do not violate religious norms of a society. U.S. commanders ensure this through education before deployment.

Government

During most U.S. military missions, forces are responding in support of a given political entity. Consequently, forces should work to promote the U.S. supported government. While it is important (in the short term) to articulate

U.S. contributions, for long term success it is more important to advocate the accomplishments of the native government. U.S. forces may be the contributing factors to providing stability to a situation, but eventually will go home. If legitimacy is not established with the native government, stability may be only temporary.

U.S. forces must identify key government officials and integrate them as appropriate in the operation early. There are two benefits to this early integration. First, they can provide valuable information needed for successful completion of the operation. These government officials could provide information about the infrastructure of the city, locations of enemy concentration and a common picture of cultural norms. Secondly, the close cooperation with government officials provides the host government the catalyst to attain legitimacy with the populace for involvement of U.S. forces.

Interrelationship between the Systems

A system is an interdependent group of objects. A city is therefore a system. Each of the individual subsystems resolves a particular need for a community. These separate contributions are important in themselves, but it is important to understand their dependency on other subsystems to exist and function. The following examples illustrate the potential for interaction

between subsystems.

The medical subsystem is very dependent on other subsystems for normal operations. Health services are housed in buildings and require transportation and the road networks to receive patients and medical supplies. Natural gas or electricity provides the heat for this facility. Medical personnel use clean water and electricity to sterilize utensils. Without these other subsystems, medical personnel may not be able to provide sufficient medical support to the community.

Two other examples of interdependency are found in the telecommunication and government subsystems. The telecommunication subsystem relies heavily on electricity for existence. Should the electrical system be damaged or destroyed, U.S. forces would find it difficult to advise the populace on its mission. Also, if the gas subsystem is damaged, the populace will become discontented from the lack of heat. This discontent may grow into dissatisfaction with the native government's ability to provide for the community they represent.

There are numerous secondary effects between the systems of the city as listed above. The important point is that while military plans may not intend to impact on certain subsystems, second order effects may do so and inadvertently damage the normalcy of the city. Planners should wargame potential actions to reduce undesired secondary effects.

This section described the components of the city, the contributions of

these components to normalcy, and the interdependency of these components. If U.S. forces are to conduct future urban operations, they must recognize these systems and prepare for their impact on the city and their mission.

SECTION 3

Doctrine

Doctrine - fundamental principles by which military forces guide their actions in support of national objectives.[22]

Since urban operations are becoming increasingly more likely, U.S. forces must prepare in a much more detailed manner for MOUT. The first step in preparation is developing appropriate doctrine. A good place to start this doctinal examination is with the Army's keystone manual FM 100-5, Operations.

The 1986 version of FM 100-5 listed MOUT under "Effects Of Terrain." The doctrine espoused Sun Tzu's approach toward urban warfare. It stated, "Commanders should avoid committing forces to the attack of urban areas unless the mission absolutely requires doing so."[23]

The recent revision of FM 100-5 indicates a greater acceptance of urban warfare. It recognizes that while this mission remains one of the more difficult, urban operations may no longer be avoidable. Recent changes in this manual recognize an increased possibility of future urban combat.

The 1993 version made much progress in recognizing the increasing probability and importance of MOUT. In the 1993 version, MOUT was covered under "Special Operations." This version is more realistic as it states, "Urban operations present unique and complex challenges to Army forces."[24]

While the aversion to MOUT has all but vanished, the doctrine does impart restrictive considerations. It states, "Commanders must enforce discipline in their operations to minimize unnecessary collateral damage and civilian casualties."[25] This statement reflects a recognition of the urban battlefield as more than merely different terrain. Unfortunately, the current capstone doctrine for urban operations, Field Manual 90-10, Military Operations on Urbanized Terrain dated 1979, has not been updated to accommodate this approach.

Field Manual 90-10 begins by providing an analysis of the physical structure of a city. It does so in two chapters: the introduction and again in an appendix entitled "Urban Terrain Analysis."

In the introduction to FM 90-10, there is a discussion of urbanization and characteristics of urban warfare. In the urbanization portion, the manual discusses the size of cities by classification - large cities, towns and small cities, villages, and strip areas. This subsection discusses a basic guideline for classifying cities by size. The discussion concentrates on cities in western and central Europe. A section titled 'Building And Street Patterns' examines the physical layout of cities in the former Federal Republic of Germany(FRG). Its emphasis can be understood by its lead sentence "The physical layout of built-up areas is of tactical importance."[26] The concentration is on the tactical considerations of cities in the former FRG.

The other subsection of the introduction is entitled "Characteristics Of Urban Warfare." This portion of the manual discusses tactical considerations

that apply to both the offense and the defense. While the rest of the manual covers the offense and defense in urban conditions, this section discusses the characteristics common to both. It describes how urban terrain is different from that of the conventional battlefield. The section also explains the difficulty forces will face with communications in the city. Further, it also emphasizes that the commander must consider the third dimension of underground systems. The basic premise of this section is that an urban battlefield is a type of terrain that will present U.S. forces significant challenges different from the conventional battlefield.[27]

Appendix A - "Urban Terrain Analysis" to FM 90-10 delineates the characteristics of the city. It begins, "This appendix supplements Chapter 1 by providing a detailed analysis of the tactical characteristics of built-up areas. It is of specific interest to commanders at levels from platoon through brigade."[28] The first portion of this appendix evaluates the various FRG city patterns based on the criteria of tactical evaluation for defense and tactical evaluation for offense. Each of these criteria is further assessed for mobility, fields of fire/observation, obstacles, cover/concealment, fire hazard, and command/control. The next portion of this appendix examines the types of buildings and their tactical significance. This section discusses the common buildings found in the former FRG. The assessment reviews the cover afforded, the ease of reducing buildings to rubble, protection provided by external walls, defendability, and possible fire hazard.[29]

While the 1979 version provides great depth into the physical dimensions of a city, it does not provide a complete assessment. It could be improved by considering all factors that influence a state of normalcy and legitimacy. There is also no discussion on the civil-military interaction and its implications on military operations. There are many reasons behind this shortcoming, but if not rectified this neglect will limit the vision for future operations in this significantly different environment. The next section analyzes the impact of shortcomings of this manual.

SECTION 4

Analysis

With the shift in the National Military Strategy from the large scale mechanized battles on the plains of Europe to regional orientation and crisis response, emphasis on MOUT must be assigned a vastly increased priority.[30]

This section contrasts the information found in FM 90-10 and the demands of current and future MOUT operations as discussed in section two of this paper. The analysis will include three significant shortcomings with the 1979 manual and the implications of these shortcomings.

Shortcomings with FM 90-10

The first shortcoming with the 1979 manual is that the focus is totally toward the defense of the former FRG. This is understandable given the 1979 publication date. At that time, the primary concern was defense against the Warsaw Pact. These forces provided a substantial enemy with a defined mission. The U.S. mission of defense (along with NATO allies) was easily discernible. If the Warsaw Pact countries had decided to attack, the defense of FRG cities would have been a great concern for U.S. forces.

The difficulty U.S. forces face today is identifying the enemy on which to orient their focus. Finding a contemporary enemy on which to focus with the same intensity as during the Cold War period is not probable. The National

Military Strategy recognizes this by stating that "the real threat we now face is the threat of the unknown, the uncertain."[31] Therefore, U.S. forces must prepare for a vast spectrum of possible contingencies. This manual should not focus on one regional area. It should discuss the common factors of the city's systems. The commander and his planners can apply this common framework to wherever the contingency.

The second and perhaps the most significant shortcoming with the 1979 version of FM 90-10 is that despite its position as the capstone MOUT manual, it takes a totally tactical perspective on urban operations. There are many other very good manuals that cover the tactical perspective of MOUT. These include FM 90-10-1 Tactics, Techniques and Procedures for Urban Operations; TC 90-1 Training for MOUT; and FMFM 7-15 Marine Corps - Military Operation in Urban Terrain. These manuals very well address tactical considerations for attacking or defending a city. The capstone MOUT manual (FM 90-10) should provide a more encompassing perspective.

The U.S. Army's keystone warfighting manual FM 100-5, Operations, provides the operational commander and his planners a guide on how to think about warfighting instead of providing directive guidelines. Field Manual 90-10, Urban Operations, should provide the same perspective for urban operations.

While it is very important to understand the tactical considerations for fighting in the city, there are other considerations that the operational

commander should understand before he commits soldiers to this significantly different battlefield. Operational commanders have the responsibility to achieve national and strategic aims through tactical application. To do this, they must have a vision that will accomplish the mission while maintaining the strategic intent. To facilitate this, FM 90-10 should give the operational commander a comprehensive perspective of the city including many points in this paper. This information would give him a more complete vision of this different battlefield.

One missing element, due to this purely tactical perspective, is the concept of legitimacy. Legitimacy of an operation is normally critical to long term mission success. Further, it is a direct product of the civilian populace. The populace determines the legitimacy of the mission. U.S. forces may believe that they are being successful, but if the local and international populace lack that viewpoint, then legitimacy may not be attained. This failure may have a short-term effect on the U.S. forces, who will redeploy home, but the long-term effect on the host nation could be devastating. Planners should aim to attain legitimacy for the U.S. mission and the host government. These two are interrelated. Actions by U.S. forces will have a direct impact on the legitimacy of the mission in the eyes of the indigenous population and the international community. These actions will also have a secondary effect on the legitimacy of the host government. The populace may lose faith in the U.S. supported government if military actions create continued and unnecessary hardship on

the noncombatants. Gaining this legitimacy from the populace requires a greater understanding and accommodation of their cultural norms and standard of living.

Commanders and planners must recognize the impact of their actions on the populace. If U.S. forces defeat the enemy by destroying the infrastructure or alienating the populace, they may win the battle but lose the war. The first step is understanding the components of the city and the interrelationships between these components. This leads to another shortcoming of FM 90-10.

The third shortcoming with the 1979 manual is that it addresses the urban battlefield almost exclusively as a change in terrain. The manual portrays an urban environment as a conventional battlefield with buildings. "Commanders must be prepared to fight on terrain which is constantly being modified by man to meet his needs. In urbanized regions, commercial and industrial complexes continue to spread across the ground over which forces must maneuver."[32] This shallow perspective ignores many critical criteria of the city, like the social factors and utilities of a city.

Commanders and planners need to understand the city as a system of systems which satisfies essential requirements of the populace living there. This system is a series of interrelated components. Each of these components have individual functions within the city, but also contribute to the collective normalcy of the city. Commanders must recognize that actions which affect one functional area may have secondary effects on other parts of the system.

Understanding the city as a system begins with an appreciation of the individual components, their contributions to the city as a whole, and the impact that military actions may have on the individual and systematic normalcy of the city

Field Manual 90-10 fails to recognize the systems of the city, which satisfy many needs of the population The three major components are infrastructure, utilities, and social factors Infrastructure includes the physical composition and the transportation networks The city patterns discussed in the 1979 version were useful and should be retained in future MOUT manuals The second element of the infrastructure, transportation networks, has operational considerations of the transportation nodes and should be expanded in future MOUT manuals The 1979 version of FM 90-10, however, fails to address the other two components of the city's system - utilities and social factors

Utilities of a city can have vast impact on U S operations and the populace They include communications, natural gas, electricity, water, and health services The dialogue should address each of these subsystems from the perspective of the functions each provides the city's normal operation It should also confront the operational and tactical implications of each subsystem

The other component of the city system, which FM 90-10 does not address, are the social factors The interaction with the civilian populace demands a greater understanding of social factors during urban operations The social

factors can be discussed under the broad categories of cultural, religious, and governmental considerations. Commanders must understand these factors that may impact military operations.

Each of the subsystems, discussed above, are important to the city. But, the critical realization must be that these subsystems do not operate independently. As a system of systems, which supports the populace, commanders should consider secondary effects that impact on the normality within the city. This normality could have an immediate impact on the mission's legitimacy in the eyes of the local population and the international community. Deliberate attempts to minimize hardship promotes goodwill with the populace and subsequently, sets the conditions to foster legitimacy.

The Gulf War Air Power Survey Summary Report provides a good example of these secondary effects that planners must consider. During Operation Desert Storm planners recognized the possible implications and developed plans accordingly.

> Planners wished to minimize long-term damage to Iraq's economic infrastructure, even as they provided for attacks against both electricity and oil targets. This constraint led air planners and targeting specialists to try to restrict attacks on Iraqi power to strikes on transformer/ switching yards and control buildings rather than on generator halls, boilers, and turbines in order to minimize recuperation time after the conflict ended.[33]

Despite their aim to reduce the enemy's ability to communicate, planners deliberately tried to minimize the long term damage to the infrastructure and utilities. This careful targeting enhanced the coalition's legitimacy

SECTION 5

Conclusion

We have paid the price of being wrong before. It is far cheaper in the long run, and far safer, to pay the price that readiness requires -- even in this safer world that our past efforts have made possible.[34]

United States National Military Strategy, 1992

The cries for 'no more Task Force Smiths' have echoed through military halls for the last few years. The emphasis is that the military must maintain its trained and ready status during peacetime. Trained and ready are two separate considerations. It is possible to be trained but not ready because the training was ill-focused. Doctrine provides the focus for this training. To this point, the Army has not given MOUT the doctrinal emphasis it deserves.

Without this emphasis from doctrine, the Army may be trained, but not ready. "As Sun Tzu stated some 2000 years ago, the costs associated with conducting urban warfare can be exorbitant. The United States discovered in the 1968 battle for Hue City that this excessive cost is guaranteed when war is waged by an untrained unit without appropriate doctrine."[35] The surprise of the Tet Offensive is somewhat understandable since the focus was on jungle warfare. Current MOUT doctrine does not provide the guidelines essential to accommodate future urban operations.

Urban operations are more likely in the future and one of the more difficult

operations. These two facts argue for more emphasis on MOUT. If we do not prepare for it, we will enter the situation in much the same manner as the Marines at Hue in 1968. The conclusion of 1968 was, "if the VC (Vietcong) had made one smart move, they would have had our ass, hat and cufflinks."[36] The Army should not enter the next conflict hoping that the enemy does not make 'one smart move.' Therefore, the Army must recognize the increased probability of urban warfare.

Military operations in urban terrain will be a significant feature of future conflicts for which the Army must prepare. This preparation must begin with a greater emphasis within doctrine. While Army doctrine is slowly moving away from the Sun Tzu approach of 'never' to the more feasible approach of 'carefully', it must continue this progress.

Field Manual 90-10 needs revision with a new focus. This 1979 manual has three significant problems that must be revised to provide operational commanders and planners a useful document. The first change must encompass a different level of vision for urban operations. The 1979 manual is a very tactical manual. It describes the steps to conduct an attack or defense of a city. It also points out the tactical considerations for MOUT. The revised manual should provide a 'how to think' approach about the city vice a 'what to do' approach.

Next, the manual must move away from its central European orientation. The 1979 manual was developed purely for the defense of the former FRG

This was probably an accurate focus during the Cold War, but the Cold War is over. The current U.S. strategy has a worldwide orientation. The possible contingencies across the globe makes the 'single region doctrine' inadequate. The revised manual should assess norms of urban areas throughout the world.

The final change should address the fact that the city embodies more than terrain. The 1979 manual restricts its scope to the conditions and tactical implications of the city's buildings. A city is a system of systems that perform individual and collective functions for the community. Envisioning an urban environment in this manner affords operational planners a more thorough view from which to develop their plans. The coverage should include the components of the system and the operational implications of each. These changes in a revised FM 90-10 will provide the Army a document from which to extract concepts for developing operational plans.

United States Army units have doctrinally avoided MOUT for many years because it seemed too hard to do. Today, the probability of this mission is much higher and it is still hard to do. In 1980, one of the Army's greatest trainers, GEN William E. Depuy, said that MOUT was an "unclimbed mountain."[37] That 'mountain' still exists. Before the National Command Authority sends us into this environment on short notice, we need to be prepared. The first step is to develop doctrine that provides an operational vision of the city. Field Manual 90-10 is the manual to provide this vision. An in-depth coverage of the fundamentals of the city is a critical component of

this manual.

SECTION 6

Recommendations

LEGITIMACY - Committed forces must sustain the legitimacy of the operation and of the host government. Legitimacy derives from the perception that constituted authority is both genuine and effective and employs appropriate means for reasonable purposes. If committed forces solve an immediate problem within a nation or region but detract from the legitimacy of the government in so doing, they may have acted detrimentally against long-term, strategic aims.[38]

Field Manual 100-5

Given the significantly different military scenario that the Army faces today, compared to that of the Cold War, it should review doctinal manuals for their usefulness Field Manual 90-10 is one of the manuals that needs updating This section recommends possible changes

*** FM 90-10 SHOULD PROVIDE AN OPERATIONAL PERSPECTIVE**

Field Manual 90-10 should be rewritten to provide an operational vision for urban operations Understanding the functioning of the city must be the start point of this operational vision of a city Operational commanders and planners should also have this level of understanding a city Field Manual 90-10 should provide this

To project this concept, the manual should take a three-step process. The first step would espouse the idea of normalcy and legitimacy during urban operations. The second step should explain the system of systems which comprise the city. Finally, this doctrine should describe the interdependency of the separate systems and their connectivity with military operations.

*** FM 90-10 SHOULD DISCUSS THE SUBJECTS OF NORMALCY AND LEGITIMACY DURING URBAN OPERATIONS**

A primary consideration of fighting in the city versus on an open battlefield is that U.S. forces must accomplish a mission while minimizing the impact on innocent civilians. The end state of an urban operation should be defeating the enemy; maintaining the closest possible state of normalcy within the city; and attaining legitimacy of the U.S. mission.

Although defeating the enemy is the primary concern, commanders and planners must remain cognizant of the innocent civilians on this battlefield. Urban operations are complicated by the presence of noncombatants. Defeating an adversary while minimizing hardship to the civilian populace requires extreme care in planning and application of these plans. One step to minimize hardship is to try to maintain normalcy.

Since the city's systems of systems provide the normality to the lives of the populace, commanders and planners must understand the functions and

interrelationships of these systems. Damage to any part of the city's system may jeopordize the normal conditions. Maintaining normalcy will minimize the hardship, foster goodwill with the populace, and consequently contribute to the legitimacy of the mission.

Legitimacy is a critical factor during urban operations due to constant interaction with the civilian populace. The civilian populace contributes significantly to the perceived legitimacy of the mission. Minimizing the hardship on the populace will promote the mission in a positive way. Attaining this legitimacy requires a careful planning and execution.

*** FM 90-10 SHOULD DISCUSS THE CITY'S SYSTEM OF SYSTEMS**

The new doctrine should address the city as more than different terrain. It should identify the systems that make up the city. These systems include the infrastructure, utilities and social factors. Perhaps to aid this understanding a model, could convey this idea. Figure 1 is a possible example to express this concept. This figure would be the basis for understanding an urban environment as more than just a grouping of buildings. This first figure shows a basic model of the components of the city. This figure displays the connection of these three components. This very basic model provides the first step in understanding this complex environment.

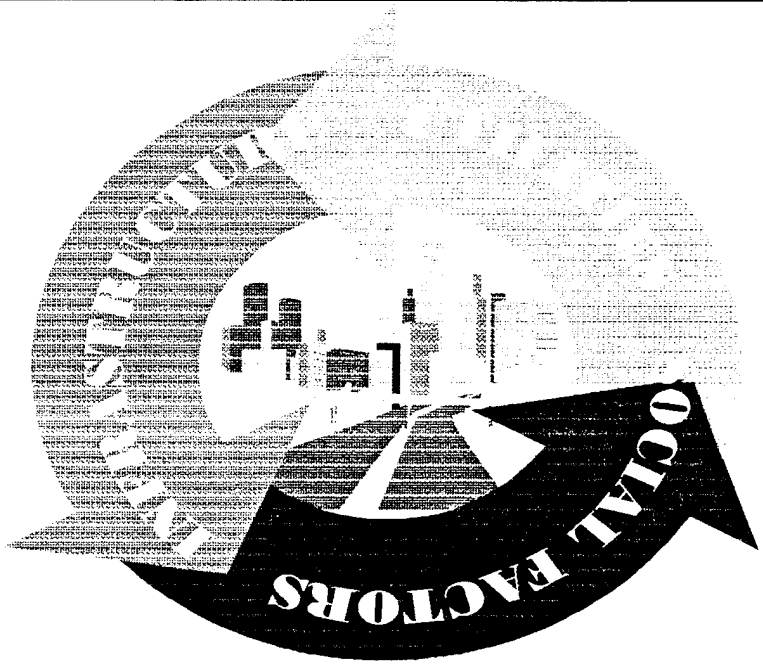

Figure 1. Foundation of a City

*** FM 90-10 SHOULD ADDRESS THE CONNECTIVITY OF THE CITY SYSTEMS**

In addition to a discussion of specific systems, the manual should highlight the interrelationship between these systems. Again, a model may facilitate this understanding. Figure 2 is a possible graphic which would show the individual subsystems and their interrelationships. Figure 2 identifies the individual subsystems of a city. This figure also identifies some of the operational

commander's forces that may be used to interact with the individual subsystems. Effects on one subsystem can have secondary impact on other subsystems.

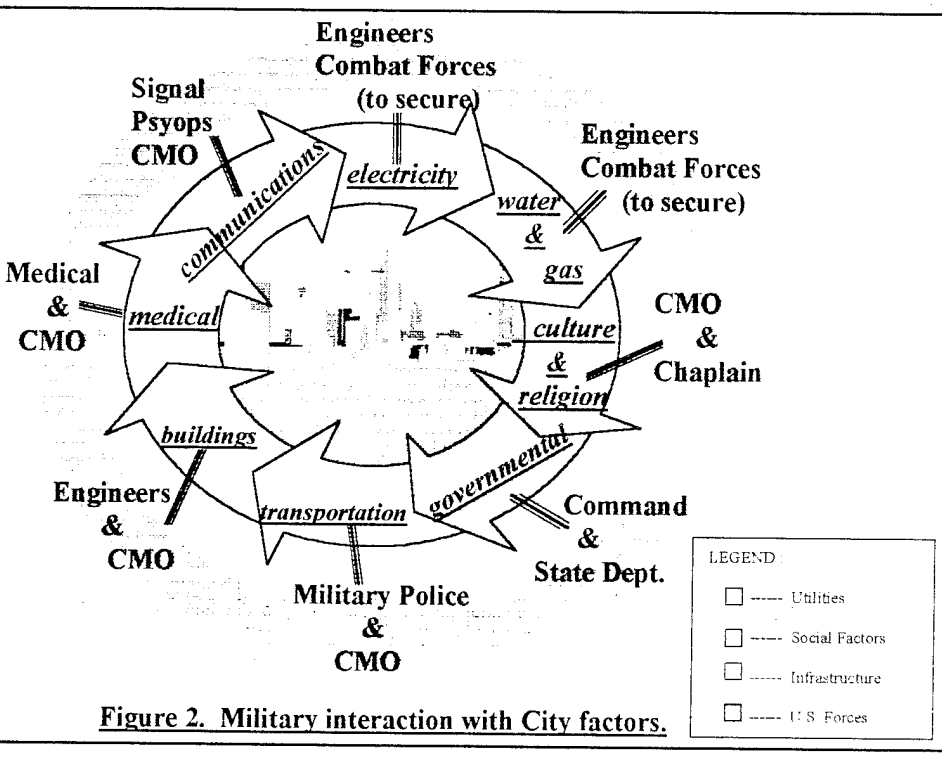

Figure 2. Military interaction with City factors.

This paper is not intended to be prescriptive. It does not propose a totally passive approach toward all urban operations. It does propose that planners and commanders must have a comprehensive vision of an urban environment. With this vision, they can make educated decisions and recognize the secondary effects of these decisions. This discussion of the fundamentals of the city is not intended to provide an all-inclusive template from which to

conduct all operations. Field Manual 90-10 should provide operational considerations for commanders and planners. All missions and cities will vary, but functional aspects of the city could have both tactical and operational implications.

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32. Field Manual 90-10, p. i.

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